REMARKS

Claims 1-16, 18-20, and 22 remain in the application, and claim 23 has been added. Claim 8 was allowed by the Examiner. Claims 3 and 21 were objected to because of informalities. Claim 6 was rejected under 35 U.S.C. § 112 as being indefinite. Claims 1-5, 10-12, and 17-21 were rejected under 35 U.S.C. § 102(b) as being anticipated by Dahlgren, U.S. Patent No. 4,337,126. Claim 22 was rejected under 35 U.S.C. § 102(b) as being anticipated by Sherman, U.S. Patent No. 5,059, 296. Claims 7 and 9 were rejected under 35 U.S.C. § 103(a) as being unallowable over Dahlgren. Finally, claims 6 and 13-16 were rejected under 35 U.S.C. § 103(a) as being unallowable over Dahlgren and further in view of Sherman.

In view of the rejections, it is instructive to provide a brief summary of the present invention, as explained in part in the Brief Summary on page 4 and the Detailed Description on page 7. The present invention includes a buoyant enclosure that floats on a body of water. A plurality of electrodes extends outward from the enclosure, generating chlorine from salt dissolved in water. In one embodiment, a plurality of photovoltaic solar cells are disposed at an angle to the horizon when the buoyant enclosure is allowed to float in a body of water, and the angle declines between about 30° and 45°. This decline angle (or incline from the perspective of the water towards the center cells) enables the solar panels to more efficiently capture solar energy, as described on page 7 of the specification, lines 8-10. See also Figure 2. Applicant asserts that a plurality of photovoltaic solar cells disposed at an angle to the horizon when the buoyant enclosure is allowed to float in a body of water is a unique and novel feature of the present invention.

In addition to the feature of the angled cells, the electrodes may also be coated with an oxidizer coating, which prevents accumulation of scales (i.e., chemical build-up) on the electrodes. Applicant asserts that the oxidizer coating on the electrodes is also a unique and novel feature.

The prior art, however, is not directed to photovoltaic cells disposed at a declining angle.

Rather, the prior art contains only cells disposed in a flat position. This configuration is not optimal because the cells may not catch as much light when the sun is close to the horizon. Conversely, the photovoltaic cells of the present invention receive more light because they lie on a decline angle and thereby receive maximum sunlight as the sun descends.

In addition, the prior art does not teach or disclose an oxidizer coating applied to the electrodes. Instead, the prior art is directed toward an electrode alloy that prevents corrosion of the electrodes. The present invention, in contrast, includes oxidizer coating to prevent chemical accumulation on the electrodes in addition to preventing corrosion of the electrodes.

Objections to claims 3 and 21

Claim 3 has been amended to include a feature from original claim 1, namely "a polarity reversing module electrically connected to the plurality of electrodes, the polarity reversing module configured to periodically alternate the electrical polarity of the electrodes, thereby preventing corrosion of the electrodes." Claim 21 has been cancelled. Elements of original claim 3 have been incorporated into amended claim 1 in order to clarify a function of the buoyant enclosure in claim 1.

Rejection of claim 6 under 35 U.S.C. § 112

Claim 6 has been amended to refer to the "polyhedrical shape" of claim 5. Amended claim 7 again refers to the polyhedrical shape. Consequently, claims 5-6 each have proper antecedent basis for all their elements.

Rejections of claims 1-5, 10-12, and 17-21 under 35 U.S.C. § 102(b) as being anticipated by Dahlgren

Applicant hereby amends claim 1 to contain allowable subject matter from original claim 9. Specifically, claim 1 now contains the following element: "the plurality of photovoltaic solar

cells disposed at an angle to the horizon when the buoyant enclosure is allowed to float in a body of water." Applicant asserts that the aforementioned element recites a novel and unobvious feature. Consequently, Applicant asserts that claim 1 is allowable and that claims 2-11, and 18-20 are allowable because they depend on claim 1.

Claim 9 was rejected under 35 U.S.C. § 103(a) as unallowable over Dahlgren (4,337,136). Because Applicant hereby amends claim 1 to include features of claim 9, Applicant will consider the 35 U.S.C § 103(a) rejection of claim 9 here.

Examiner asserts that the modified shape of the claimed invention would have been obvious within the ordinary skill in the art at the time the invention was made. The basis for this rejection as cited by the Office Action is in In re Dailey, 357 F.2d 669 (Cust. & Pat. App. 1966), MPEP, § 2144.04. According to Dailey, the shape or configuration of an invention is obvious "absent persuasive evidence that the particular configuration of the claimed invention was significant." Id. Applicant respectfully disagrees with the rejection because the configuration of the claimed invention is indeed significant.

The shape of the buoyant enclosure is significant because the angle of the photovoltaic solar cells allows sunlight to strike the cells even when the sun is low in the sky. Consequently, the angle enables the photovoltaic cells to capture solar energy more efficiently than prior art floatable sanitizer devices (see page 7, lines 8-10). This improvement is very significant because the device may store more energy and work longer during the day. Because the device can work longer, the body of water holding the device will be cleaner. Thus, the improved shape of the present invention is not a simple "matter of choice," as in Dailey, but rather a significant addition to the functionality of the present invention.

To establish a *prima facie* case of obviousness, three basic criteria must be met. MPEP §§ 2143-2143.03. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Id. Second, there must be a reasonable

expectation of success. Id. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Id. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. Id.

None of the references cited by the Office Action give any suggestion or motivation to modify the shape of a buoyant enclosure to include a decline angle such that photovoltaic cell efficiency is increased. It follows that there is also no expectation of success expressed in the prior art for the present invention's improvements. Therefore, the only way to reject claim 9 under 35 U.S.C. § 103(a) is to establish that knowledge generally available to one of ordinary skill in the art at the time of the invention suggested to modify the references presented by the Examiner. Applicant asserts that this is not the case; rather, Examiner's assertions use impermissible hindsight.

Regarding hindsight, an obviousness rejection may be proper "so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure." MPEP § 2145. The present rejection clearly uses Applicant's disclosure to glean the requisite knowledge. The Office Action states, "[in light of Dailey], one of ordinary skill in the art would have routinely adjusted such variables to obtain ideal values of either floatation or surface area exposure." Item 9, page 7. These variables, i.e., the angle of the solar panels, are discussed on page 7 of Applicant's disclosure. The benefit of increased surface area exposure is implied in the statement on page 7 that the unique angle enables the solar panels "to more efficiently capture solar energy." The Office Action thus clearly used Applicant's disclosure to glean this knowledge with impermissible hindsight. If this knowledge were not impermissible hindsight, then the prior art would surely mention this knowledge because it greatly improves energy and pool cleaning efficiency.

Because neither the references nor the knowledge generally available at the time of the

invention suggests a modification or combination of the references, Applicant asserts that original claim 9 and hence amended claim 1 are allowable. Consequently, Applicant asserts that all claims dependent on claim 1 are allowable.

Claims 2 and 4 remain in their original form. Claim 3 has been amended to include a feature from original claim 1. Claim 8 has been amended to further clarify the central photovoltaic cell feature of the present invention and to eliminate the specific dependence on eight surrounding cells. Claim 10 has been amended to further specify one embodiment of electrodes, as depicted in Figure 5. In addition, claims 5-7, 9, and 11 have been amended to create consistent terminology and to clarify relationships among elements.

Claim 16 has been amended to provide proper antecedent basis on previous claims. Claim 17 has been cancelled because its features are reflected in amended claim 3. Claims 18-20 have been amended to depend, either directly or indirectly, on amended claim 3.

Amended claim 22 includes a feature in independent form from original (rejected) claim 11. The feature defines "an oxidizer coating on each electrode, the oxidizer coating configured to resist the formation of chemical accumulation on the electrodes and prevent corrosion of the electrodes." The Office Action asserts that this feature is included in Dahlgren at column 3, lines 3-6. In this column, Dahlgren says, "Each of the electrodes 20 and 21 is formed of an alloy of intermixed silver and copper, the relation preferably being about 1/2 percent silver and 99 1/2 percent copper by weight." Column 3, lines 3-6.

Applicant asserts that the electrodes in claims 11 and 22 are different from Dahlgren's electrodes in at least two ways. First, the electrodes of the present invention have a different composition than Dahlgren's electrodes (see page 7 of the specification, line 25). The description of the present invention states that the electrodes are "preferably constructed of titanium with a baked-on oxidizer coating such as platinum." Id. Dahlgren, however, describes an "alloy of intermixed silver and copper," not mentioning titanium at all. Dahlgren at column 3, lines 3-6. Secondly, Dahlgren also does not disclose an "oxidizer coating such as platinum" on

his electrodes, as the present invention does. This oxidizer coating functions to resist the formation of scale on the electrodes.

Accordingly, Applicant asserts that amended claim 22 is allowable, and therefore claims 12-16, which depend on claim 22, are also allowable. In addition, Applicant has added claim 23, which claims the "platinum" oxidizer coating described on page 7, line 25 of the description. As claim 23 depends on claim 22, Applicant asserts that claim 23 is also allowable.

Rejection of claim 22 under 35 U.S.C. § 102(b) as being anticipated by Sherman

Applicant hereby amends claim 22 as discussed immediately preceding this section.

Rejection of claims 7 and 9 under 35 U.S.C. § 103(a) as being unallowable over Dahlgren

Applicant asserts that claims 7 and 9 are allowable because they depend on claim 1, and claim 1 is also allowable for reasons set forth above.

Rejection of claims 6 and 13-16 under 35 U.S.C. § 103(a) as being unallowable over Dahlgren and further in view of Sherman

Applicant hereby amends claim 6 for reasons stated above. Applicant asserts that amended claim 6 is allowable because it depends on claim 1, which is allowable. In addition, Applicant asserts that claims 13-16 are allowable because they depend on claim 22, which is also allowable for reasons set forth above.

Conclusion

Applicant asserts that the claim 1 element, "the plurality of photovoltaic solar cells disposed at an angle to the horizon when the buoyant enclosure is allowed to float in a body of water," makes claim 1 allowable because it recites a significant improvement over the prior art. Because claim 1 is in condition for allowance, Applicant asserts that dependent claims 2-11, and

18-20 are also in condition for allowance. In addition, the claim 22 feature, "an oxidizer coating on each electrode," is allowable because it is not taught by Dahlgren. Accordingly, dependent claims 12-16 and 23 are also in condition for allowance.

If any impediments to the prompt allowance of these claims can be resolved by a telephone conversation, the Examiner is respectfully requested to contact the undersigned.

Respectfully submitted,

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